COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Valley Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

City of Harrisonburg
Resource Recovery Facility
1630 Driver Drive
Harrisonburg, Virginia
Permit Number: VRO81016

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, the City of Harrisonburg has applied for a renewal of the Title V Operating Permit for its Resource Recovery Facility. The Department has reviewed the application and has prepared a Title V Operating Permit.

Engineer/Permit Contact: *-signed original-* Date: *11/7/2013*
Jeremy W. Funkhouser
(540) 574-7820

Air Permit Manager: *-signed original-* Date: *11/7/2013*
Janardan R. Pandey, P.E.

FACILITY INFORMATION

Permittee
City of Harrisonburg
345 South Main Street
Harrisonburg, Virginia 22801

Facility
Resource Recovery Facility
1630 Driver Drive
Harrisonburg, Virginia 22801

Plant Identification Number: 51-660-0118

SOURCE DESCRIPTION

NAICS Code: 562213 – Solid Waste Combustors and Incinerators
NAICS Code: 221330 – Steam and Air-Conditioning Supply

The Resource Recovery Facility (RRF) combusts municipal waste in municipal waste combustion units (MWCUs) and natural gas/distillate oil in boilers in order to supply steam and chilled water to the James Madison University (JMU) campus. Any steam that is produced in excess of JMU's needs, depending on the load, may be vented to the atmosphere or diverted to a turbine for electrical power generation, and then sold to the Harrisonburg Electric Commission. The existing Tile V permit allows operation of two MWCUs (rated each at 100 tons/day), two natural gas/distillate oil fired boilers (rated each at 43.2 MMBtu/hr) and one shredder.

The RRF is considered to be part of a single source in conjunction with James Madison University, VRO80117, for purposes of determining applicability of requirements for the prevention of significant deterioration (PSD) and Title V operating permit programs. Future modification of the two facilities that make up the single source must be addressed together to calculate net emission increases for comparison with PSD significance levels.

The facility is a Title V major source of CO, NO_x and HCl. This source is located in an attainment area for all pollutants. The facility is currently operating under a minor new source review (NSR) permit issued on November 8, 2005 as amended May 20, 2008. The existing Title V permit for the facility was issued on January 15, 2009 and expires on January 14, 2014.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, was most recently conducted on May 22, 2013. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any other state or federal applicable requirements at this time.

CHANGES TO EXISTING TITLE V PERMIT

The following are changes to the existing Title V permit since the last renewal. Please note that the condition numbers are from the draft Title V permit.

Facility Information / Emission Units:	Updated emission unit list to include emergency generator, which is subject to federal MACT Subpart ZZZZ requirements.
Fuel Burning Equipment Requirements:	Added Major Source Boiler MACT 40 CFR 63 Subpart DDDDD requirements for the two existing natural gas and distillate oil-fired boilers. Compliance date = January 31, 2016
Emergency Generator Requirements:	Added MACT Subpart ZZZZ requirements for the existing natural gas fired generator (spark ignition) rated at 70 kW/hr. Compliance date = October 19, 2013
Entire Permit:	Updated to a numbered condition format rather than sections.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Table I. Significant Emission Units.

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Fuel Burning Equipment							
3	ST3	English Boiler (constructed 1996-1997)	43.2 MMBtu/hr	Low NO_x Burner	#3 LNB	NO_x	11/18/05 Permit as amended 05/20/08
4	ST4	English Boiler (constructed 1996-1997)	43.2 MMBtu/hr	Low NO_x Burner	#4 LNB	NO_x	11/18/05 Permit as amended 05/20/08
8	ST8	Kamptech Terminator 5000 Universal Roller-Crusher/ Shredder (constructed 2003)	1.075 MMBtu/hr	---	---	---	11/18/05 Permit as amended 05/20/08
Municipal Waste Combustion Units							
1	ST1	Barlow Projects Municipal Waste Combustion Unit (MWCU) (constructed 2003)	100 tons/day	Fabric Filter	# 1 FF	PM, PM-10	11/18/05 Permit as amended 05/20/08
				Dry-Dry Flue Gas Scrubbing System	# 1 FGSS	HCl, SO_2	
				Carbon Injection System	# 1 CIS	Mercury, Dioxin	

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
2	ST2	Barlow Projects Municipal Waste Combustion Unit (MWCU) (constructed 2003)	100 tons/day	Fabric Filters	# 2 FF	PM, PM-10	11/18/05 Permit as amended 05/20/08
				Dry-Dry Flue Gas Scrubbing System	# 2 FGSS	HCl, SO_2	
				Carbon Injection System	# 2 CIS	Mercury, Dioxin	
Emergency Generator							
5	ST5	Onan, Model 70ENC Natural Gas-fired Emergency Generator	70 kW/hr	---	---	---	---

*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement

EMISSIONS INVENTORY

A copy of the 2012 annual emission update is included in Attachment A. Emissions are summarized in the following tables.

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Table II. 2012 Actual Criteria Pollutant Emissions

	Criteria Pollutant Emissions (tons/yr)					
	VOC	CO	SO_2	PM-10	NO_x	Pb
Two MWCUs	2.32	2.00	8.94	0.71	96.91	0.00307
Two Boilers	0.16	2.49	0.02	0.23	0.96	-
Shredder	0.0007	0.002	0.0006	0.0006	0.009	-
Total	**2.48**	**4.492**	**8.96**	**0.94**	**97.87**	**0.00307**

Table III. 2012 Actual Hazardous Air Pollutant Emissions

Pollutant	Hazardous Air Pollutant Emissions (tons/yr)
Hydrogen Chloride	2.09
Dioxin/Furan	0.00075
Mercury	0.0011
Cadmium	0.00015

EMISSION UNIT APPLICABLE REQUIREMENTS

Fuel Burning Equipment Requirements (Two Boilers) - Units # 3 & 4

Limitations

The two boilers are subject to 40 CFR 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units The following limitations are state BACT and/or NSPS requirements from the minor NSR permit dated November 8, 2005 as amended May 20, 2008. Please note that the condition numbers are from the 2005 permit as amended in 2008; a copy of the permit is enclosed as Attachment B.

Condition 5: NO_x emissions shall be controlled by flue gas recirculation with low NO_x burners.

Condition 25: Limit on the types of fuels to be combusted in the boilers. Natural gas and distillate oil are the only approved fuels.

Condition 27: Limit on fuel consumption.

Condition 29: Limit on the sulfur content of distillate oil to be combusted. Sulfur content shall not exceed 0.05 percent by weight, per shipment.

Condition 31: Hourly emission limits for criteria pollutants.

Condition 32: Annual emission limits for criteria pollutants.

Condition 34: Visible emission limit of 10 percent, except during one six-minute period in any hour where visible emissions shall not exceed 20 percent.

Condition 36: Boiler emissions shall be controlled by proper operation and maintenance. Written operating procedures and a maintenance schedule shall be maintained.

Condition 37: Except where the Title V permit is more restrictive than the applicable requirement, the two boilers (Ref. Nos. 3 and 4) shall be operated in compliance with the requirements of 40 CFR Part 60, Subpart Dc.

The two boilers are also subject to 40 CFR 63 Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters (the Boiler MACT); unless the permittee obtains federally enforceable limits on its facility-wide emissions of hazardous air pollutants (HAPs) to below major-source thresholds prior to the specified date, the following federal requirements, derived from 40 CFR Part 63, will apply. For each standard, "requirements" include all control, operational, work practice, monitoring, recordkeeping, reporting, and testing requirements, as

applicable The following limitations are established in accordance with the Boiler MACT (condition numbers refer to the Title V permit):

Condition 13: No later than January 16, 2016, the boilers shall comply with the emission limitations and work practice standards (§63.7500) of 40 CFR 63 Subpart DDDDD.

Monitoring and Recordkeeping

The monitoring and recordkeeping requirements in Conditions 30, 52, 58 b., 58 c., 58 d, 58 l. and 58.m. of the minor NSR permit, dated November 8, 2005 as amended May 20, 2008, have been included in the permit. These monitoring requirements meet the Part 70 requirements

The permittee will keep records of monthly and annual throughput of each type of fuel.

Actual emissions from the operation of the two boilers will be calculated using the following equations:

For natural gas combustion:

$$E = F \times N$$

..... Equation 1

Where:
E = Emission Rate (lb/time period)
F = Pollutant specific emission factors as follows:

PM	=	7.6 lb/million ft^3
PM-10	=	7.6 lb/million ft^3
SO_2	=	0.6 lb/million ft^3
CO	=	84 lb/million ft^3
NO_x	=	50 lb/million ft^3
VOC	=	5.5 lb/million ft^3

N = Natural gas consumed (million ft^3/time period)

For distillate oil combustion:

$$E = F \times O$$

..... Equation 2

Where:
E = Emission Rate (lb/time period)
F = Pollutant specific emission factors as follows:

PM	=	2.0 lb/1000 gal

PM-10	=	1.0 lb/1000 gal
SO_2	=	142 S lb/1000 gal (S = weight percent sulfur)
CO	=	5.0 lb/1000 gal
NO_x	=	20.0 lb/1000 gal
VOC	=	0.2 lb/1000 gal

O = Distillate oil consumed (1000 gal/time period)

The boilers in operation at the Resource Recovery Facility are subject to NSPS Subpart Dc. The NSPS contains requirements for SO_2 emissions. All of the SO_2 monitoring requirements (fuel monitoring requirements) from the subpart have been incorporated into the operating permit. The permittee will monitor the sulfur content of the each shipment of distillate oil, and will maintain certifications from each fuel supplier that demonstrates compliance with the 0.05 percent, by weight, requirement. Accordingly, keeping records of the type of fuel purchased and its sulfur content meets the periodic monitoring requirement for SO_2 emissions.

The hourly emission limits established for all other criteria pollutants (particulate, NO_x, CO, and VOC) are based on the capacity of the boilers. Therefore, if the boilers are operated at capacity, or below, there should not be a violation of the hourly emission rates. Calculations have been included in Attachment C to demonstrate how the limits were obtained.

The annual emission limits established for all other criteria pollutants (particulate, NO_x, CO, and VOC) are based on the fuel limit contained within the permit. Regarding these pollutants, the fuel throughput is the factor that determines emission rates. Calculations have been included in Attachment C to demonstrate that if City of Harrisonburg combusts all that is allowed in the permit, then the permit limits will not be violated. Therefore, as long as the fuel throughput limit is not violated, there is very little chance that the criteria pollutant emission limits will be violated. Recordkeeping demonstrating compliance with the fuel throughput limit can also be used to demonstrate compliance with the criteria pollutant emission limits, satisfying the periodic monitoring requirement.

The Visible Emission Evaluation (VEE) was performed on February 27, 1998, using the worst case fuel, distillate oil, at full capacity of the boilers. The test data revealed opacity of 0 percent under the above mentioned conditions for both boilers. The results of the test data show that there is little likelihood of violating the opacity limitation. Therefore, as long as the boilers are operated properly it can be assumed that the opacity limitation will not be violated. The permit also requires monthly inspections to be performed on each of the boiler stacks (Condition 52 of the minor NSR permit dated November 8, 2005 as amended May 20, 2008). Each inspection shall include an observation of the presence of visible emissions. If during the inspection visible emissions are observed, a visible emissions evaluation (VEE) shall be conducted in accordance with the 40 CFR Part 60, Appendix A, Method 9. The monthly inspections will satisfy the periodic monitoring requirement for the visible emission limitation for the two boilers. Maintenance of records demonstrating that the operators have been properly trained along with maintenance of operating procedures will ensure compliance with the opacity limitation and satisfy the periodic monitoring requirement. Boiler inspection reports have revealed no past

violations of the opacity limitations contained in this permit.

Compliance with the limitations and work practice standards (§63.7500) of the 40 CFR Part 63 Subpart DDDDD (Industrial/ Commercial/Institutional Boilers and Process Heater NESHAP) is established through Condition 18 of the Title V permit. Compliance with the limitations and work practice standards is established through the initial compliance (§63.7510), and continuous compliance (§63.7535-63.7540) requirements of 40 CFR 63 Subpart DDDDD. Compliance with the recordkeeping requirements of 40 CFR 63 Subpart DDDDD (§63.7555 and §63.7560) is established through Condition 19 of the Title V permit.

These monitoring and recordkeeping requirements meet Part 70 requirements.

Compliance Assurance Monitoring (CAM) Plan Applicability

The CAM plan does not apply to these boilers, as none of the boiler has potential pre-controlled emissions of any pollutant that exceeds major source threshold levels.

Testing

Other than the Method 9 test described above, the permit does not require other source tests. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

The permit includes the requirement to submit fuel quality reports semi-annually. This is a requirement from NSPS Subpart Dc.

The permit also includes the following reporting and notification requirement from 40 CFR 63 Subpart DDDDD (the permit condition refers to the Title V permit):

> Condition 23: No later than January 31, 2016, the two boilers (Ref. Nos. 3 and 4) shall comply with the notification and reporting requirements (§63.7545 and §63.7550) of 40 CFR 63 Subpart DDDDD.

Streamlined Requirements

The following applicable requirements have not been included for the reasons provided:

- The fuel sulfur content requirement of 0.05 percent in the minor NSR permit (Condition 29 of November 8, 2005 as amended May 20, 2008) is more stringent than the one in NSPS Subpart Dc. Therefore, the limit from minor NSR permit has been included in the Title V permit.

- The two boilers are subject to 9 VAC 5-50-80, Standard for Visible Emissions. Under

that regulation, each boiler may not emit visible emissions greater than 20 percent except for one six-minute period where visible emissions may not exceed 30 percent. The minor NSR permit dated November 8, 2005 as amended May 20, 2008 limits the visible emissions from these two boilers to 10 percent opacity. Compliance with the permit requirement will ensure that the boilers are in compliance with 9 VAC 5-50-80. Therefore, 9 VAC 5-50-80 has been streamlined out of the permit.

Fuel Burning Equipment Requirements (One Shredder) - Unit # 8

Limitations

The following limitations are state BACT and other applicable requirements from the minor NSR permit dated November 8, 2005 as amended May 20, 2008. Please note that the condition numbers are from the 2005 permit as amended in 2008; a copy of the permit is enclosed as Attachment B.

Condition 26: Limit on the type of fuel to be combusted in the shredder. Distillate oil is the only approved fuel.

Condition 28: Limit on fuel consumption.

Condition 29: Limit on the sulfur content of distillate oil to be combusted. Sulfur content shall not exceed 0.05 percent by weight, per shipment.

Condition 33: Emission limits for criteria pollutants.

Condition 35: Visible emission limit of 10 percent.

Monitoring and Recordkeeping

The monitoring and recordkeeping requirements in Conditions 53, 58c., 58 d., 58 l. and 58 m. of the minor NSR permit, dated November 8, 2005 as amended May 20, 2008, have been included in the operating permit.

The permittee will monitor the sulfur content of the each shipment of distillate oil, and will maintain certifications from each fuel supplier that demonstrate compliance with the 0.05 percent, by weight, requirement.

The permittee will keep records of monthly and annual throughput of distillate oil used in the shredder.

Actual emissions from the operation of the shredder will be calculated using the following equations:

$$E = F \times O$$

..... Equation 3

Where:

E	=	Emission Rate (lb/time period)
F	=	Pollutant specific emission factors as follows:

PM	=	0.31 lb/MMBtu
PM-10	=	0.31 lb/MMBtu
SO_2	=	0.29 lb/MMBtu
CO	=	0.95 lb/MMBtu
NO_x	=	4.41 lb/MMBtu
VOC	=	0.35 lb/MMBtu

O	=	Shredder Rating (1.075 MMBtu/hr)

The hourly emission limits established for all criteria pollutants (particulate, NO_x, CO, and VOC) are based on the capacity of the shredder. Therefore, if the shredder is operated at capacity, or below, there should not be a violation of the hourly emission rates. Calculations have been included in Attachment C to demonstrate how the limits were obtained.

The annual emission limits established for all criteria pollutants (particulate, NO_x, CO, and VOC) are based on the fuel limit contained within the permit. Regarding these pollutants, the fuel throughput is the factor that determines emission rates. Calculations have been included in Attachment C to demonstrate that if City of Harrisonburg combusts all that is allowed in the permit, then the permit limits will not be violated. Therefore, as long as the fuel throughput limit is not violated, there is very little chance that the criteria pollutant emission limits will be violated. Recordkeeping demonstrating compliance with the fuel throughput limit can also be used to demonstrate compliance with the criteria pollutant emission limits, satisfying the periodic monitoring requirement.

The Visible Emission Evaluation (VEE) was performed on May 17, 2004 at the shredder stack. The test data revealed average six-minute opacity of 0.35 percent. The results of the test data show that there is little likelihood of violating the opacity limitation. Therefore, as long as the shredder is operated properly it can be assumed that the opacity limitation will not be violated. The permit also requires that monthly inspection to be performed on shredder stack. Each inspection shall include an observation of the presence of visible emissions. If during the inspection visible emission are observed, a visible emissions evaluation (VEE) shall be conducted in accordance with the 40 CFR Part 60, Appendix A, Method 9. The monthly inspection will satisfy the periodic monitoring requirement for the visible emission limitation for the shredder.

These monitoring and recordkeeping requirements meet Part 70 requirements.

Compliance Assurance Monitoring (CAM) Plan Applicability

The CAM plan does not apply to the shredder, as the shredder does not use a control device to

achieve compliance with the emission limitations.

Testing

Other than the Method 9 test described above, the permit does not require other source tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

There is no reporting requirement for the shredder.

Streamlined Requirements

The following applicable requirements have not been included for the reasons provided:

- The shredder is subject to 9 VAC 5-50-80, Standard for Visible Emissions. Under that regulation, the shredder may not emit visible emissions greater than 20 percent except for one six-minute period where visible emissions may not exceed 30 percent. The minor NSR permit dated November 8, 2005 as amended May 20, 2008 limits the visible emissions from the shredder to 10percent. Compliance with the permit requirement will ensure that the shredder is in compliance with 9 VAC 5-50-80. Therefore, 9 VAC 5-50-80 has been streamlined out of the permit.

Municipal Waste Combustion Units Requirements - Units # 1 & 2

Limitations:

The MWCUs (Ref. Nos. #1 and #2) are subject to 40 CFR 60 Subpart AAAA – Standards of Performance for Small Municipal Waste Combustion Units. All applicable limitations from Subpart AAAA have been included in the permit. The following limitations are state BACT and other applicable requirements including Subpart AAAA requirements from the minor NSR permit issued on November 8, 2005 as amended May 20, 2008. Please note that the condition numbers are from the 2005 permit as amended in 2008; a copy of the permit is enclosed as Attachment B.

Condition 2: Particulate emissions shall be controlled by fabric filters.

Condition 3: Acid gas (HCl and SO_2) emissions shall be controlled a dry-dry flue gas scrubbing system.

Condition 4: Mercury and dioxins/furans emissions shall be controlled by a carbon injection system.

Condition 13: Limit on the types of material to be incinerated in the MWCUs.

Condition 14: Limit on amount of solid waste incinerated each year.

Condition 15: Approved fuels for the auxiliary burner at each MWCU.

Condition 16: Short term emission limits for Dioxin/Furans, Cadmium, Lead, Mercury, Opacity, Particulate Matter (PM), Hydrogen Chloride (HCl), Nitrogen Oxides (NO_x), Sulfur Dioxide ($SO_{2)}$, Carbon Monoxide (CO) and Fugitive Ash.

Condition 17: Application of emission limits contained in Condition 16 regarding start-up, shut down and malfunction.

Condition 18: Hourly and Annual emission limits for PM, PM-10, NO_x, SO_2, CO, VOC and HCl.

Condition 19: Requirements for operator training.

Condition 20: Plant-specific employee training requirements.

Condition 21: Plant-specific training manual requirements.

Condition 22: Operator certification requirements.

Condition 23: Good combustion practice requirements for MWCU.

Condition 24: Except where the Title V permit is more restrictive than the applicable requirement, the MWCUs (Ref. Nos. 1 and 2) shall be operated in compliance with the requirements of 40 CFR Part 60, Subpart AAAA.

The minor NSR permit allows each MWCUs to burn both natural gas and distillate oil. The units were modified in 2008 to burn only natural gas. Although distillate oil is an approved fuel, it cannot be utilized by the MWCUs. The facility requested distillate oil be removed as an approved fuel; there are no changes to the emission limitations as a result of this change.

Monitoring and Recordkeeping

As per 40 CFR Part 64 Compliance Assurance Monitoring (CAM), emission limitations or standards proposed after November 15, 1990 pursuant to section 111 or 112 are exempt from CAM (40 CFR §64.2(b)(1)). All applicable monitoring requirements from Subpart AAAA have been included in the permit. Since Subpart AAAA was promulgated on December 2001 under the authority of Section 111 New Source Performance Standards (NSPS) and Section 129 Rules for Solid Waste Combustion (MACT), the subpart AAAA standard is exempt from CAM requirements, and no additional monitoring has been incorporated into the Title V permit.

The monitoring requirements in Conditions 6, 7, 8, 9, 10, 11, 12, 38, 39, 40, 41, 42, 43, 44, 45, and 46, of the minor NSR permit, dated November 8, 2005 as amended May 20, 2008, have been included in the permit. These monitoring requirements meet Part 70 requirements.

The permittee is required to install continuous emission monitoring systems (CEMS) to measure and record the concentration of SO_2 and CO emitted by each of the MWCUs. This will satisfy the periodic monitoring requirement for the SO_2 and CO emission limit contained within the permit for each MWCU.

Compliance with the emission limits established for opacity shall be determined by annual visible emissions evaluation (VEE) in accordance with the 40 CFR Part 60, Appendix A, Method 9. The facility has demonstrated initial compliance with opacity limit using CFR Part 60, Appendix A, Method 9 in March 2004. Since then, facility has demonstrated compliance with opacity limits annually as required in the permit. The facility will continue to demonstrate compliance with opacity limit using EPA Method 9 annually (or every third year but no later than 36 months from the previous stack test if the facility has demonstrated compliance over three consecutive years) as required under Condition 57. The permittee is also required to install a continuous opacity monitor system to measure and record the opacity of emissions from each MWCU as per Subpart AAAA requirements. The continuous opacity monitors will also satisfy the periodic monitoring requirements for the opacity.

Compliance with the short term emission limits established for dioxin/furans, cadmium, lead, mercury, particulate matter (PM), hydrogen chloride (HCl), Nitrogen Oxides (NO_x), Sulfur dioxide, carbon monoxide and fugitive ash shall be determined by annual stack tests required in the permit. These annual stack testing will also satisfy the periodic monitoring requirements.

The hourly and annual emission limits established for PM-10, PM, SO_2, NO_x, CO and HCl are based on the short term emission limits. Calculations have been included in Attachment D to demonstrate how the limits were obtained.

The hourly and annual emission limits established for VOC are based on the capacity of the MWCU. Therefore, if the MWCU is operated at capacity, or below, there should not be a violation of the hourly and annual emission rates. Calculations have been included in Attachment D to demonstrate that if City of Harrisonburg combusts all the solid waste that is allowed in the permit, then the emission limits will not be violated. Therefore, as long as the solid waste throughput limit is not violated, there is very little chance that the emission limits for VOC will be violated. Recordkeeping demonstrating compliance with the solid waste throughput limit can also be used to demonstrate compliance with VOC emission limits, satisfying the periodic monitoring requirement.

Actual emissions from the operation of the each MWCU will be calculated using the following equations:

1. For PM and PM-10:

$$E = F \times Q \times \left(\frac{1gm}{1000gm}\right) \times \left(\frac{1lb}{453.6gm}\right)$$

……Equation 4

Where:

E = Emission Rate (lb/time)

F = Pollutant specific emission factors (mg/dscm) from the stack tests. The latest stack test resulted in the following emission factors:

PM / PM-10 = 2.30 mg/dscm (MWCU #1)
= 4.08 mg/dscm (MWCU #2)

Q = MWCU Air Flow (dscm/time)

2. For SO_2, CO, NO_x and HCl:

$$E = F \times M.W. \times Q \times \left(\frac{1L}{1{,}000{,}000L}\right) \times \left(\frac{1000L}{m^3}\right) \times \left(\frac{1lb}{453.6gm}\right)$$

……..……..……Equation 5

Where:

E = Emission Rate (lb/time)

F = Pollutant specific emission factors from the stack tests (ppm) or from CEMS. The latest stack test resulted in the following emission factors:

NOx	=	224 ppm	(MWCU #1)
	=	213 ppm	(MWCU #2)
HCl	=	5.81 ppm	(MWCU #1)
	=	6.42 ppm	(MWCU #2)

Q = MWCU Air Flow (dscm/time)

M.W. = Molecular Weight (g/mol) as follows:

SO_2	=	64 g/mol
CO	=	28 g/mol
HCl	=	36.5 g/mol
NO_x	=	44 g/mol

3. For VOC:

$$E = F \times O$$

..... Equation 6

Where:

E	=	Emission Rate (lb/time period)
F	=	Pollutant specific emission factors as follows:
VOC	=	0.1 lb/ton
O	=	Solid waste incinerated (ton/time period)

These monitoring and recordkeeping requirements meet Part 70 requirements.

Compliance Assurance Monitoring (CAM) Plan Applicability

The CAM plan does not apply to MWCUs (Ref. Nos 1 and 2) as these units are subject to emission limitations in New Source Performance Standards (NSPS) proposed after November 15, 1990. These MWCUs are subject to NSPS Subpart AAAA that was effective on December 6, 2001.

Recordkeeping

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. The recordkeeping requirement contained in Title V permit has been incorporated from Condition 58 of the minor new source review permit dated November 8, 2005 as amended May 20, 2008.

Testing

Annual stack testing is required for each MWCU. The tests are required for Dioxin/Furans, Cadmium, Lead, Mercury, Opacity, Particulate Matter (PM), Hydrogen Chloride (HCl), Nitrogen Oxides (NO_x), Sulfur Dioxide ($SO_{2)}$, Carbon Monoxide (CO) and Fugitive Ash. The permittee may test less often if all stack tests for a given pollutant over three consecutive years show compliance with the emission limit. In this case, the permittee is not required to conduct a stack test for that pollutant for the next two years. However, the permittee must conduct another stack test within 36 months of the anniversary date of the third consecutive stack test that shows compliance with the emission limit. The testing required in the Title V permit has been incorporated from Conditions 49, 50 and 51 of the minor new source review permit dated November 8, 2005 as amended May 20, 2008.

The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

The permit requires semi-annual and annual reporting. The reporting required in the Title V permit has been incorporated from Conditions 54 and 55 of the minor new source review permit dated November 8, 2005 as amended May 20, 2008.

Streamlined Requirements

The following applicable requirements have not been included for the reasons provided:

- The two MWCUs are subject to 9 VAC 5-50-80, Standard for Visible Emissions. Under that regulation, each MWCU may not emit visible emissions greater than 20 percent except for one six-minute period where visible emissions may not exceed 30 percent. The minor NSR permit dated November 8, 2005 as amended May 20, 2008 limits the visible emissions from these two MWCUs to 10 percent. Compliance with the permit requirement will ensure that the MWCUs are in compliance with 9 VAC 5-50-80. Therefore, 9 VAC 5-50-80 has been streamlined out of the permit.

- Initial performance evaluations of the CEMS and COMS as required under 40 CFR §60.1240 and §60.1270 (NSPS Subpart AAAA) have not been included in the permit as these requirements are already satisfied.

- Initial performance tests on each MWCU as required under 40 CFR §60.1285 (NSPS Subpart AAAA) have not been included in the permit as these requirements are already satisfied.

- The initial report required under 40 CFR §60.1385 (NSPS Subpart AAAA) has not been included in the permit as this requirement is already satisfied.

Emergency Generator – Ref. No. 5

The emergency generator is an existing stationary spark-ignition (SI) engine with a site rating less than 500 horsepower (HP) located at a major source of HAPs. The engine is subject to the National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63 Subpart ZZZZ).

Limitations

The emergency generator has an engine horsepower less than or equal to 500 HP, and is considered an existing stationary SI RICE at a major source of HAP emissions. The following conditions have been added to the Title V permit:

Condition 65: This condition establishes the emergency generator shall be operated in compliance with the requirements of 40 CFR 63, Subpart ZZZZ, except where the permit is more restrictive.

Condition 66: This condition establishes the hourly operational conditions for the emergency stationary RICE.

Condition 67: The emergency generator shall meet the applicable work practice standards in 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary RICE).

Condition 68: In accordance with Table 2c of the MACT, Subpart ZZZZ, during periods of startup the permittee must minimize the time spend at idle for the emergency engine and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.

The MACT establishes maintenance requirements, hourly operational conditions, work practice standards, and limitations on usage during startup and idle, for the emergency generator as specified above.

Monitoring and Recordkeeping

The following monitoring and recordkeeping conditions were established to determine compliance with the MACT limitations:

Condition 69: The permittee must install non-resettable hour meter on the emergency generator in accordance with 40 CFR 63.6625(f) The hour meter shall be provided with adequate access for inspection.

Condition 70: In accordance with 40 CFR 63.6625(e), the permittee shall develop a maintenance plan that provides to the extent practicable for the maintenance and operation of each engine in a manner consistent with good air pollution control practice for minimizing emissions, for the emergency generator.

Condition 71: The permittee must keep records of all maintenance conducted on the listed emergency generators as well as hours of operation that are recorded on the hour meter.

The requirements for installation of non-resettable hour meters, provided in Condition 69, establishes the means of determining compliance with the hour limitations specified in Conditions 66 and 67. The facility is required to keep records of the hours of operation of each generator to ensure the limitations of Conditions 66 and 67 are met.

The required maintenance and operating plans assure compliance with MACT requirements to maintain and operate the engine in accordance with the manufacturer's written instructions. The maintenance and operating plans, as well as records of all scheduled and unscheduled maintenance and operator training will also help to establish reasonable assurance of compliance with the emission limits and visible emission standards established in the permit. The facility is also required to maintain hours of operation for the emergency generator to ensure that each continues to meet the definition of emergency-use, as found in the Virginia Regulations and the

MACT.

These monitoring and recordkeeping requirements meet Part 70 requirements.

Reporting

The emergency generator is exempt from notification requirements under 40 CFR 63.6645(a)(5).

Testing

Condition 72 establishes that if testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ.

Facility Wide Conditions

Limitations

The following limitations are state BACT and other applicable requirements from the minor NSR permit dated November 8, 2005 as amended May 20, 2008. Please note that the condition numbers are from the 2005 permit as amended in 2008; a copy of the permit is enclosed as Attachment B.

Condition 61: Violation of Ambient Air Quality Standard

Condition 62: Maintenance/Operating Procedures.

Notifications and Recordkeeping

The notifications and recordkeeping requirements in Conditions 60 and 62 of the minor NSR permit, dated November 8, 2005 as amended May 20, 2008, have been included in the operating permit.

Streamlined Requirements

The remaining general conditions (other than Conditions 61 and 62 described above) in the minor NSR permit have been modified to meet the general condition requirements of 40 CFR Part 70 and 9 VAC 5-80-110.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions, including

those caused by upsets.

FUTURE APPLICABLE REQUIREMENTS

None were identified by the facility.

INAPPLICABLE REQUIREMENTS

The provisions of 40 CFR Part 98 – Mandatory Greenhouse Gas Reporting require owners and operators of general stationary fuel combustion sources that emit 25,000 metric tons CO_{2e} or more per year in combined emissions from such units, to report greenhouse gas (GHG) emissions, annually. The definition of "applicable requirement" in 40 CFR 70.2 and 71.2 does not include requirements such as those included in Part 98, promulgated under Clean Air Act (CAA) section 114(a)(1) and 208. Therefore, the requirements of 40 CFR Part 98 are not applicable under the Title V permitting program.

As a result of several EPA actions regarding GHG under the CAA, emissions of GHG must be addressed for a Title V permit renewed after January 1, 2011. The current state minor NSR (or PSD) permit for the City of Harrisonburg – Resource Recovery Facility contains no GHG-specific applicable requirements and there have been no modifications at the facility requiring a PSD permit. Therefore, there are no applicable requirements for the facility specific to GHG.

Currently inapplicable requirements identified by the applicant include the following requirements:

NSPS Subpart E, Standards of Performance for Incinerators, applies to each incinerator with a charging rate of more than 50 tons/day. The City has two units, each with a charging rate equal to 100 tons/day. However, as per 40 CFR §60.1025, Subpart E does not apply to a municipal waste combustion unit (MWCU), if the unit is subject to Subpart AAAA. Since the MWCUs at the City of Harrisonburg are subject to Subpart AAAA, these units are not subject to NSPS Subpart E.

NSPS Subpart Eb, Standards of Performance for Large Municipal Waste Combustors, is not an applicable requirement for the City of Harrisonburg. The NSPS applies to each municipal waste combustor unit with a combustion capacity greater than 250 tons/day. The City has two units, each with a capacity of 100 tons/day, and the minor NSR permit dated November 8, 2005 as amended May 20, 2008 limits each unit to burning no more than 100 tons/day (i.e. total of 200 tons/day).

NSPS Subpart CCCC, Standards of Performance for Commercial and Industrial Solid Waste Incineration Units, is not an applicable requirement for the City of Harrisonburg. The municipal waste combustor units are subject to NSPS Subpart AAAA and are therefore exempt from Subpart CCCC.

NSPS Subpart EEEE, Standards of Performance for Other Solid Waste Incineration Units for which construction commenced after December 9, 2004, is not an applicable requirement for the City of Harrisonburg. The municipal waste combustor units are subject to NSPS Subpart AAAA and are therefore excluded from Subpart EEEE.

NSPS Subpart IIII, Standards of Performance for Stationary RICE, is not an applicable requirement for the City of Harrisonburg. The 70 kW emergency generator was constructed and manufactured before the applicability date of Subpart IIII, and is therefore not subject to NSPS Subpart IIII.

MACT Subpart JJJJJJ, National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, is not an applicable requirement for the City of Harrisonburg. The facility is a major source of HAPs, and is subject to the NESHAP/MACT for major sources; the area source requirements of Subpart JJJJJJ are not applicable.

The City of Harrisonburg did not identify any additional inapplicable requirements in their application.

COMPLIANCE PLAN

The City of Harrisonburg is currently in compliance with all applicable requirements. No compliance plan was included in the application or in the permit.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Table IV. Insignificant Emission Units.

Emission Unit No.	Emission Unit Description	Citation[1] (9 VAC_)	Pollutant(s) Emitted (5-80-720 B.)	Rated Capacity (5-80-720 C.)
-	One 12,000 Gallon #2 Fuel Oil Storage Tank	9 VAC 5-80-720 B	VOC	-

[1]The citation criteria for insignificant activities are as follows:
9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
9 VAC 5-80-720 B - Insignificant due to emission levels
9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

The City of Harrisonburg did not submit a request for confidentiality. Therefore, all portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

A public notice regarding the draft permit was placed in the Daily News Record, Harrisonburg, Virginia, on September 5, 2013. EPA was sent a copy of the draft permit and notified of the public notice on September 4, 2013. West Virginia, the only affected state, was sent a copy of the public notice on September 5, 2013. All persons on the Title V mailing list were sent a copy of the public notice by either electronic mail or in letters on September 5, 2013. The 30-day public comment period was from September 5, 2013 through October 7, 2013. The EPA reviewed the permit concurrently with the public comment period. The EPA comment period expired on October 22, 2013.

No comments were received.

ATTACHMENTS

Attachment A – 2012 Annual Emissions Update
Attachment B – Minor NSR Permit (dated November 8, 2005 as amended May 20, 2008)
Attachment C – Emission Calculations for Boilers and Shredder
Attachment D – Emission Calculations for Municipal Waste Combustion Units (Units # 1 & 2)

ATTACHMENT A

2012 Annual Emissions Update

ATTACHMENT B

Minor NSR Permit
(dated November 8, 2005 as amended May 20, 2008)

ATTACHMENT C

Emission Calculations for Boilers and Shredder
(Ref. Nos. 3, 4 and 8)

ATTACHMENT D

Emission Calculations for Municipal Waste Combustion Units (Ref. Nos. 1 & 2)